

CLAIMS

1. A superconducting cable comprising:
 - a former (2) made of a normal-conducting metal;
 - 5 a first superconducting layer (3) formed around the outer circumference of said former (2);
 - an electric insulating layer (4) formed around the outer circumference of said first superconducting layer (3);
 - 10 a second superconducting layer (6) formed around the outer circumference of said electric insulating layer (4); and
 - a normal-conducting metal layer (5) formed between said electric insulating layer (4) and said second superconducting layer (6).
- 15 2. The superconducting cable according to claim 1, wherein said second superconducting layer (6) and said normal-conducting metal layer (5) are electrically insulated from each other at the middle portion of the cable and are electrically connected to each other at the both end portions of the cable.
- 20 3. The superconducting cable according to claim 1, wherein said normal-conducting metal layer (5) is formed by winding round wires with a round cross section or tape-shaped wires formed from a normal-conducting metal.
- 25 4. The superconducting cable according to claim 3, wherein said wires include wire insulating layers around their outer circumferences.
5. The superconducting cable according to claim 3, wherein said normal-conducting metal layer (5) has a multi-layer structure.

6. The superconducting cable according to claim 5, wherein the respective layers constituting said normal-conducting metal layer (5) are electrically insulated from one another.

5 7. The superconducting cable according to claim 1, wherein said superconducting layers (3, 6) are formed by winding superconducting wires constituted of a matrix made of silver or a silver alloy and a superconducting material enclosed within the matrix.

10 8. The superconducting cable according to claim 7, wherein said superconducting wires have a matrix ratio within a range between 1.5 or more and 3.0 or less.

9. The superconducting cable according to claim 1, wherein said former (2) is formed by twisting a plurality of normal-conducting metal wires, and said normal-conducting metal wires include wire insulating layers around their outer circumference.

15 10. The superconducting cable according to claim 1, wherein said former (2) is formed by stranding a plurality of normal-conducting metal wires and applying compression molding to them to shape the cross section thereof into a round shape.